

Amendments To The Claims

Please cancel claims 1-12, 14, 16-34 without prejudice or disclaimer.

Claims 1-12 (Cancelled)

13. (Currently Amended) A patterning method using ~~the~~ a photomask ~~according to claim 1~~ including an isolated light-shield pattern formed on a transparent substrate that is transparent to an exposure light, characterized in that the light-shielding pattern is formed from a light-shielding film region formed from a light-shielding film, and a phase shift region having an opposite phase with respect to a light-transmitting region of the transparent substrate which has no light-shielding pattern, the light-shielding pattern includes at least a first light-shielding pattern having a first width and a second light-shielding pattern having a second width larger than the first width, a first phase region, which is part of the phase shift region and is surrounded by the light-shielding film region, is provided in a portion of the first light-shielding pattern, and only the light-shielding film region is provided in the second light-shielding pattern, ~~characterized in that it comprises the method comprising the steps of:~~

forming a resist film on a substrate;

conducting pattern exposure to the resist film using the photomask; and

developing the resist film subject to the pattern exposure so as to form a resist pattern.

Claim 14 (Cancelled)

15. (Original) The patterning method according to claim 13, characterized in that the resist film is formed from a positive resist.

Claims 16-34 (Cancelled)

35. (New) A patterning method of using a photomask including an isolated light-shielding pattern formed on a transparent substrate that is transparent to an exposure light, characterized in that the light-shielding pattern is formed from a light-shielding film region formed from a light-shielding film, and a phase shift region having an opposite phase with respect to a light-transmitting region of the transparent substrate which has no light-shielding pattern, the light-shielding pattern includes a first light-shielding pattern having a width L_m equal to or smaller than $0.18 \times M$, where the unit is μm : M is a magnification of the reduction projection optical system of an aligner, a first phase shift region, which is part of the phase shift region and is surrounded by the light-shielding film region, is provided in a portion of the first light-shielding pattern, the method comprising the steps of:

forming a resist film on a substrate;

conducting pattern exposure to the resist film using the photomask; and

developing the resist film subject to the pattern exposure so as to form a resist pattern.

36. (New) The patterning method according to claim 35, characterized in that the resist film is formed from a positive resist.

37. (New) A patterning method using a photomask, characterized in that it comprises the steps of:

forming a resist film on a substrate;

conducting pattern exposure to the resist film using the photomask; and

developing the resist film subjected to the pattern exposure so as to form a resist pattern,

wherein the photomask includes an isolated light-shielding pattern formed on a transparent substrate that is transparent to an exposure light, and is characterized in that

the light-shielding pattern is formed from a light-shielding film region formed from a light-shielding film, and a phase shift region having an opposite phase with respect to a light-transmitting region of the transparent substrate which has no light-shielding pattern,

the light-shielding pattern includes at least a first light-shielding pattern having a first width and a second light-shielding pattern having a second width larger than the first width,

a first phase shift region, which is part of the phase shift region and is surrounded by the light-shielding film region, is provided in a portion of the first light-shielding pattern, and

only the light-shielding film region is provided in the second light-shielding pattern.

38. (New) The method according to claim 37, characterized in that

a contour of the light-shielding film region is the same as a feature of the light-shielding pattern.

39. (New) The method according to claim 37, characterized in that

the light-shielding pattern further includes a third light-shielding pattern having a corner or an end, and

a second phase shift region, which is part of the phase shift region, is provided at or inside the corner of the third light-shielding pattern, or at or inside the end of the third light-shielding pattern.

40. (New) The method according to claim 37, characterized in that, the first phase shift region has a width W_m , $W_m \leq (0.4 \times \lambda/NA) \times M$, where λ is a wavelength of the exposure light, NA is a numerical aperture of a reduction projection optical system of an aligner, and M is a magnification of the reduction projection optical system.

41. (New) The method according to claim 37, characterized in that, the first light-shielding pattern has the first width L_m , $L_m \leq (0.8 \times \lambda/NA) \times M$.

42. (New) The method according to claim 41, characterized in that, the first phase shift region has a width W_m , $W_m \leq ((0.8 \times \lambda/NA) \times M) - L_m$ and $W_m \leq L_m$.

43. (New) The method according to claim 41, characterized in that, the first phase shift region has a width W_m , $0.5 \times (((0.8 \times \lambda/NA) \times M) - L_m)/2 \leq W_m \leq 1.5 \times (((0.8 \times \lambda/NA) \times M) - L_m)/2$ and $W_m \leq L_m$.

44. (New) The method according to claim 41, characterized in that, the second light-shielding pattern has the second width L_{m2} , $L_{m2} > (0.8 \times \lambda/NA) \times M$.

45. (New) The method according to claim 37, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is $(170 + 360 \times n)$ to $(190 + 360 \times n)$ degrees, where n is an integer, with respect to a wavelength of the exposure light.

46. (New) The method according to claim 37, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by etching the phase-shift region in the transparent substrate.

47. (New) The method according to claim 37, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by forming a phase shifter layer on a portion other than the light-transmitting region in the transparent substrate, and the phase shifter layer is formed under the light-shielding film region.

48. (New) The method according to claim 37, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by forming a phase shifter layer on a portion other than the light-transmitting region in the transparent substrate, and the phase shifter layer is formed above the light-shielding film region.

49. (New) The method according to claim 37, characterized in that the resist film is formed from a positive resist.

50. (New) The method according to claim 37, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by etching the light-transmitting region in the transparent substrate

51. (New) The method according to claim 37, characterized in that the step of conducting pattern exposure uses an oblique incidence illumination method.

52. (New) A patterning method using a photomask, characterized in that it comprises the steps of:

forming a resist film on a substrate;

conducting pattern exposure to the resist film using the photomask; and

developing the resist film subjected to the pattern exposure so as to form a resist pattern,

wherein the photomask includes an isolated light-shielding pattern formed on a transparent substrate that is transparent to an exposure light, and is characterized in that

the light-shielding pattern is formed from a light-shielding film region formed from a light-shielding film, and a phase shift region having an opposite phase with respect to a light-transmitting region of the transparent substrate which has no light-shielding pattern,

the light-shielding pattern includes a first light-shielding pattern having a width L_m equal to or smaller than $0.18 \times M$, where the unit is μm : M is a magnification of the reduction projection optical system of an aligner,

a first phase shift region, which is part of the phase shift region and is surrounded by the light-shielding film region, is provided in a portion of the first light-shielding pattern.

53. (New) The method according to claim 52, characterized in that a contour of the light-shielding film region is the same as a feature of the light-shielding pattern.

54. (New) The method according to claim 52, characterized in that the light-shielding pattern further includes a second light-shielding pattern having a corner or an end, and

a second phase shift region, which is part of the phase shift region, is provided at or inside the corner of the second light-shielding pattern, or at or inside the end of the second light-shielding pattern.

55. (New) The method according to claim 52, characterized in that the first phase shift region has a width W_m , $W_m \leq ((0.8 \times \lambda/NA) \times M) - L_m$ and $W_m \leq L_m$, where λ is a wavelength of the exposure light, NA is a numerical aperture of a reduction projection optical system of an aligner, and M is a magnification of the reduction projection optical system.

56. (New) The method according to claim 52, characterized in that, provided that the first phase shift region has a width W_m , $0.5 \times (((0.8 \times \lambda/NA) \times M) - L_m) / 2 \leq W_m \leq 1.5 \times (((0.8 \times \lambda/NA) \times M) - L_m) / 2$ and $W_m \leq L_m$.

57. (New) The method according to claim 52, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is $(170 + 360 \times$

n) to $(190 + 360 \times n)$ degrees, where n is an integer, with respect to a wavelength of the exposure light.

58. (New) The method according to claim 52, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by etching the phase-shift region in the transparent substrate.

59. (New) The method according to claim 52, characterized in that the phase difference of the phase shift region with respect to the light-transmitting region is provided by etching the light-transmitting region in the transparent substrate.

60. (New) The method according to claim 52, characterized in that
the phase difference of the phase shift region with respect to the light-transmitting region is provided by forming a phase shifter layer on a portion other than the light-transmitting region in the transparent substrate, and
the phase shifter layer is formed under the light-shielding film region.

61. (New) The method according to claim 52, characterized in that
the phase difference of the phase shift region with respect to the light-transmitting region is provided by forming a phase shifter layer on a portion other than the light-transmitting region in the transparent substrate, and
the phase shifter layer is formed above the light-shielding film region.

62. (New) The method according to claim 52, characterized in that the resist film is formed from a positive resist.

63. (New) The method according to claim 52, characterized in that the step of conducting pattern exposure uses an oblique incidence illumination method.